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ABSTRACT

Decision makers and psychologists (N=224) who had previously participated in at least two placement team meetings individually completed a computer simulated decision making program on a child referred for a suspected handicapping condition. Ss were randomly assigned to 16 different conditions varying on the basis of the referred child's sex, sociceconomic status, physical attractiveness, and the nature of the referral difficulty. Ss had access to test scores and information which indicated performance within the average range for the referred student's age and grade. Analyses revealed that the nature of referral information significantly affected Ss' prognoses for academic success. When Ss were told the student was referred for academic problems, they predicted difficulties in math, but not in reading or speech. Ss predicted that girls referred for academic problems would have significantly more difficulty acquiring reading skills than would girls with behavior problems. (Author/CL)

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University of Minnesota

Research Report No. 18

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Bob Algozzine and James E. Ysseldyke

Institute for Research on Learning Disabilities

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I. Adequacy of Norm-Referenced Data for Prediction of Success

II. Computer Simulation Research on the Assessment/Decision-making/Intervention Process

III. Comparative Research on Children Labeled LD and Children Failing Academically but not Labeled LD

IV. Surveys on In-the-Field Assessment, Decision Making, and Intervention

V. Ethological Research on Placement Team Decision Making

VI. Bias Following Assessment

VII. Reliability and Validity of Formative Evaluation Procedures

VIII. Data-Utilization Systems in Instructional Programming

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Abstract

Educators and psychologists who had previously participated in at least two placement team meetings individually completed a computer-simulated decision-making program on a referred child. The 224 participants were randomly assigned to 16 different conditions varying on the basis of the referred child's sex, socioeconomic status, physical attractiveness, and the nature of the referral difficulty. Participants accessed test scores and qualitative information; all scores and information indicated performance within the average range for the referred student's age and grade. Analyses revealed that the nature of referral information significantly affected decision makers' prognoses for academic scucess. When decision makers were told the student was referred for academic problems, they predicted difficulties in math, but not in reading or speech. Decision makers predicted that girls referred because of academic problems would have significantly more difficulty acquiring reading skills than would girls with behavior problems.

Decision Makers' Prediction of Students' Academic Difficulties as a Function of Referral Information

Teachers' expectations for student performances have been the topic of considerable research (Brophy & Good, 1974; Dusek, 1975; Jones, 1977; Sutherland & Algozzine, 1979); most of that interest was fostered by the "Oak School" experiment in which Rosenthal and Jacobson (1968) reportedly influenced teachers and thereby student performances by suggesting that certain children were "bloomers." In spite of considerable early criticism (Elashoff & Snow, 1970; Jensen, 1969; Snow, 1969; Thorndike, 1968), teacher expectancy effects seem to be real, measurable, and operational in a variety of settings (Brophy & Good, 1974).

One's expectations may be defined as a predicted probability of the occurrence of some future event; it has been demonstrated that expectations for personal and interpersonal performance exist (Algozzine & Mercer, in press; Brophy & Good, 1974; Jones, 1977). Interpersonal performance predictions have been shown to be influenced by current achievement level (Brophy & Good, 1974; Dalton, 1969; Good, 1970), facial attractiveness (Berscheid & Walster, 1974; Dion, Berscheid, & Walster, 1972; Walster, Aronson, Abraham, & Rottman, 1966; Widgery, 1974), behavior (Algozzine, Mercer, & Countermine, 1977; Boucher, 1979; Giesbrecht & Routh, 1979), sex of subject (Carter, 1952; Jackson & Lahaderne, 1967; Meyer & Thompson, 1956), race (Coates, 1972; Rubovits & Maehr, 1973), intellectual level (Rubovits & Maehr, 1971; Schain, 1972), and SES (Miller, McLaughlin, Haddon, & Chansky, 1968).

A variety of naturally-occurring characteristics may be influential

in the decisions teachers make about their students. A computer-simulated decision-making program was developed to study the extent to which certain of these characteristics produce differential academic competency predictions. For purposes of statistical null hypotheses, it was assumed that sex, type of referral problem, attractiveness, and socioeconomic status of parents, either alone or in combination, would have no effect on predictions of academic difficulty in reading, math, and/or speech.

Method

Subjects

Participants were 224 school professionals from public and private schools in the greater Minneapolis/St. Paul metropolitan area. All participants were volunteers who had served on at least two placement teams. Subjects represented a broad spectrum of disciplines and experience in providing direct and indirect services in educational settings; included were regular education teachers (N=58), special education teachers (N=79), school psychologists (N=30), administrators (N=31) and support personnel (e.g., social worker, nurse, etc.) (N=36).

Design

A computer-simulated decision-making program, consisting of the steps illustrated in Figure 1, was used. The first phase of the simulation involved the collection of pertinent demographic data on the participants, including a 25-item test assessing their knowledge of psychoeducational assessment.

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Insert Figure 1 about here

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Immediately following completion of the pretest, the participant was provided with a referral folder containing a referral statement. Sixteen different referral statements were used; these varied as combinations of the referred child's sex, socioeconomic status, physical attractiveness, and reason for referral. The referred child was either male or female. In half the cases the referral folder stated that the child's father was a bank vice president and the mother was a realtor (high SES condition); the other eight folders stated that the child's father was a bank janitor and the mother was a check-out clerk in a supermarket (low SES condition). In half the referral folders academic problems were listed under "reason for referral," while in the other half behavior problems were listed. Each folder contained a picture of the referred child. The pictures had previously been evaluated (inter-rater agreement = 100%) as either attractive or unattractive. Thus, in condition one the referred child was an attractive male from a high socioeconomic status environment who exhibited academic problems; in condition two the referred student was an unattractive male from a high socioeconomic status environment with academic problems, etc.

After reviewing the referral information, the subject entered the diagnostic-assessment component of the simulation program. During this phase, the subject was allowed a maximum of 25 minutes to select assessment devices and review information provided for them. For each device, the subject could access a description of the device, quantitative data for the child on the device, and/or qualitative data for the child on the device.

In the last component of the simulation, the subject was asked to make a placement decision and to respond to a series of questions designed to assess the extent to which various factors within the simulation influenced or affected the placement decision.

Procedures

Data were collected using Teleray 1061 computer terminals with accompanying interface keyboards and telephone couplers. The portable units were transported to schools and connected to the main computer via telephone. Subjects were given an opportunity to become familiar with the unique aspects of the equipment and to receive instructions on basic commands needed to complete the activity. An assistant was present at all times to provide help when the participant experienced difficulty with the system.

Each subject was randomly assigned to one of the 16 different referral conditions. The entire simulation process required approximately 45 minutes to complete.

Dependent Measure

In the present investigation, responses to three outcome questions were used as dependent measures. Subjects were asked to indicate the extent to which the child was likely to have difficulty in math, reading, or speech. Responses were recorded on a Likert-type scale with 1 = very likely and 5 = very unlikely.

Data Analysis

Data obtained from the three outcome questions were analyzed through a four-factor multivariate analysis procedure. Sex, SES, type of problem, and appearance were the independent variables (2X2X2X2);

predictions for speech, reading, and mathematics difficulties were the dependent variables. Significant multivariate effects were subjected to univariate analyses for each dependent variable as appropriate; any further effects were analyzed by t tests. The level of significance was set at 0.05; a further criterion for judging the importance of an effect was that differences between means of less than 0.5 unit value (approximately 1/2 average standard deviation unit) were considered trivial.

Results

Subjects selected tests from seven domains. A total of 1422 devices was used in the process of decision making. The following percentages of specific kinds of devices were used: intellectual measures (21%), achievement tests (29%), perceptual-motor tests (13%), behavior ratings (13%), personality tests (11%), language tests (8%), and measures of adaptive behavior (5%).

Overall effects were observed for subjects' expectations regarding the extent to which the referred student would have academic difficulties. Participants indicated that speech problems were unlikely ($\bar{X} = 4.1$), but that reading difficulties were likely ($\bar{X} = 2.1$). Expectations for math difficulties were neutral ($\bar{X} = 2.8$). T tests were used to compute the significance of differences between means. Because of the large sample size (N = 224), alpha was set at .001 and the additional criterion of at least a 0.5 difference on the Likert scale was imposed. All means differed significantly.

Means and standard deviations for the predicted academic difficulties of the case study child are presented in Table 1, grouped by the content of the referral statements. The multivariate analyses of

variance for these data yielded two significant effects; the Wilks' Lambda for the sex by type of problem interaction was 0.96 ($F = 2.62$, df 3,205, $p < .05$) and that for the type of problem was 0.94, ($F = 4.67$, $df = 3,205$, $p < .05$). Univariate follow-up analyses yielded main effects for the type of problem for predicted math difficulty and interaction effects for the sex by problem interaction for predicted reading difficulty. If the child's referral problem was academic in nature, predicted math difficulty was more likely ($\bar{X} = 2.6$) than if the problem was behavioral ($\bar{X} = 3.1$). The means and standard deviations for subjects' predictions of mathematics difficulty grouped according to main effects are presented in Table 2.

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Insert Tables 1 and 2 about here

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Analysis of the interaction effects with regard to prediction of reading difficulty yielded selective results. Girls were rated as more likely to have reading difficulties when their referral problem was academic in nature than when their problem was behavioral in nature. The results of follow-up t tests for the sex by problem interaction are given in Table 3; non-significant differences are underlined.

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Insert Table 3 about here

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Discussion

Actual test scores for the child in this case study simulation were within the average range for children of similar age and grade.

Ratings of the child's future performance in mathematics and reading were influenced by selected information in the referral statement, which was read prior to having any objective test scores or rating scales to evaluate.

The behaviors thought to be characteristic of emotionally disturbed children have been shown to be differentially bothersome to teachers and other school personnel (Algozzine, 1977); similar findings have been reported for behaviors thought to be characteristic of learning disabled children (Algozzine, 1979; Mooney & Algozzine, 1978). Giesbrecht and Routh (1979) reported that "adverse behavioral comments in the students' folders had a pervasive effect on teacher judgments" (p. 186). The results obtained in this investigation appear to extend the differential influence of a child's behavior as a biasing factor to include the nature of any problem suggested by that behavior; that influence was to some extent determined by the sex of the child.

It has also been shown that expectations for and interactions with boys and girls are different (Datta, Schaefer, & Davis, 1968; Lippett & Gold, 1959; Palardy, 1969). Schlosser and Algozzine (1979) have shown that behaviors more characteristic of boys than girls are more bothersome to teachers. Kaplan (1952) found that sex of the child, age, behavior, and school subject were influential in establishing priorities for school help (boys were referral priorities in one test) and Schlosser and Algozzine (in press) have demonstrated that sex-inappropriate behaviors were viewed less favorably than sex-appropriate ones. Sutherland and Algozzine (1979) reported that girls labeled and treated as "learning disabled" performed less adequately on a complex visual-motor task

than their "normal" classmates. The results obtained in this investigation are clearly within the range of those which might be expected based on previous research.

The finding that other characteristics of the child presented in the referral statement did not influence the educational predictions was unexpected. In light of the average level of performance specified in the child's test archive information, it seems that the SES and appearance differences may not have been strong enough to cause differential predictions of academic success. In some previous research in which those characteristics resulted in differential outcomes, the child's ability and/or achievement levels were somewhat lower (Giesbrecht & Routh, 1979; Ross & Salvia, 1975).

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Footnote

Bob Algozzine is also Associate Professor of Special Education at the University of Florida, Gainesville.

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Table 1

Means and Standard Deviations for Predicted Academic Difficulty According to Type of Information Presented in the Case Folder Referral Statement

Referral Information				Predicted Academic Difficulty		
Sex	SES	Type Problem	Appearance	Speech	Reading	Mathematics
Male	High	Academic	Attractive	4.2 0.8	2.4 0.9	2.9 1.1
			Unattractive	3.8 1.0	2.3 1.2	2.9 1.3
		Behavior	Attractive	3.7 1.0	2.1 1.1	3.4 1.2
			Unattractive	4.3 0.8	2.3 1.0	3.1 0.9
	Low	Academic	Attractive	4.1 1.4	2.1 1.2	2.6 1.4
			Unattractive	4.1 0.7	2.1 0.9	2.4 0.9
		Behavior	Attractive	4.4 0.9	2.5 1.2	3.1 1.1
			Unattractive	4.4 0.8	1.4 0.5	2.6 1.2
Female	High	Academic	Attractive	4.2 0.9	1.7 0.5	2.1 0.7
			Unattractive	3.9 1.2	2.1 0.7	3.0 1.1
		Behavior	Attractive	4.6 0.9	2.5 0.8	3.1 1.0
			Unattractive	4.2 1.3	2.2 1.3	2.8 1.0
	Low	Academic	Attractive	4.1 1.3	1.9 0.5	2.3 0.9
			Unattractive	3.6 1.3	1.8 0.6	2.3 0.9
		Behavior	Attractive	3.5 1.3	2.7 1.2	3.1 0.8
			Unattractive	4.1 1.0	2.2 0.8	3.2 1.0

Note. The upper value in each cell is the mean; the lower value is the standard deviation.

Table 2

Means and Standard Deviations for Predicted Mathematics Achievement with Subjects Grouped on the Four Independent Variables

Independent Variable		Predicted Math Achievement	
		$\bar{X}$	SD
Sex	Boy	2.9	1.1
	Girls	2.7	0.9
SES	High	2.9	1.0
	Low	2.7	1.0
Problem Type	Academic	2.6	1.0
	Behavioral	3.1	1.0
Appearance	Attractive	2.8	1.0
	Unattractive	2.8	1.0

Table 3

Results of Follow-up Analysis of Simple Effects for Predicted Reading Difficulty

Girl/ Behavior Problem	Boy/ Academic Problem	Boy/ Behavior Problem	Girl/ Academic Problem
2.4	2.2	2.1	1.9

Note. 1 = very likely, 5 = very unlikely

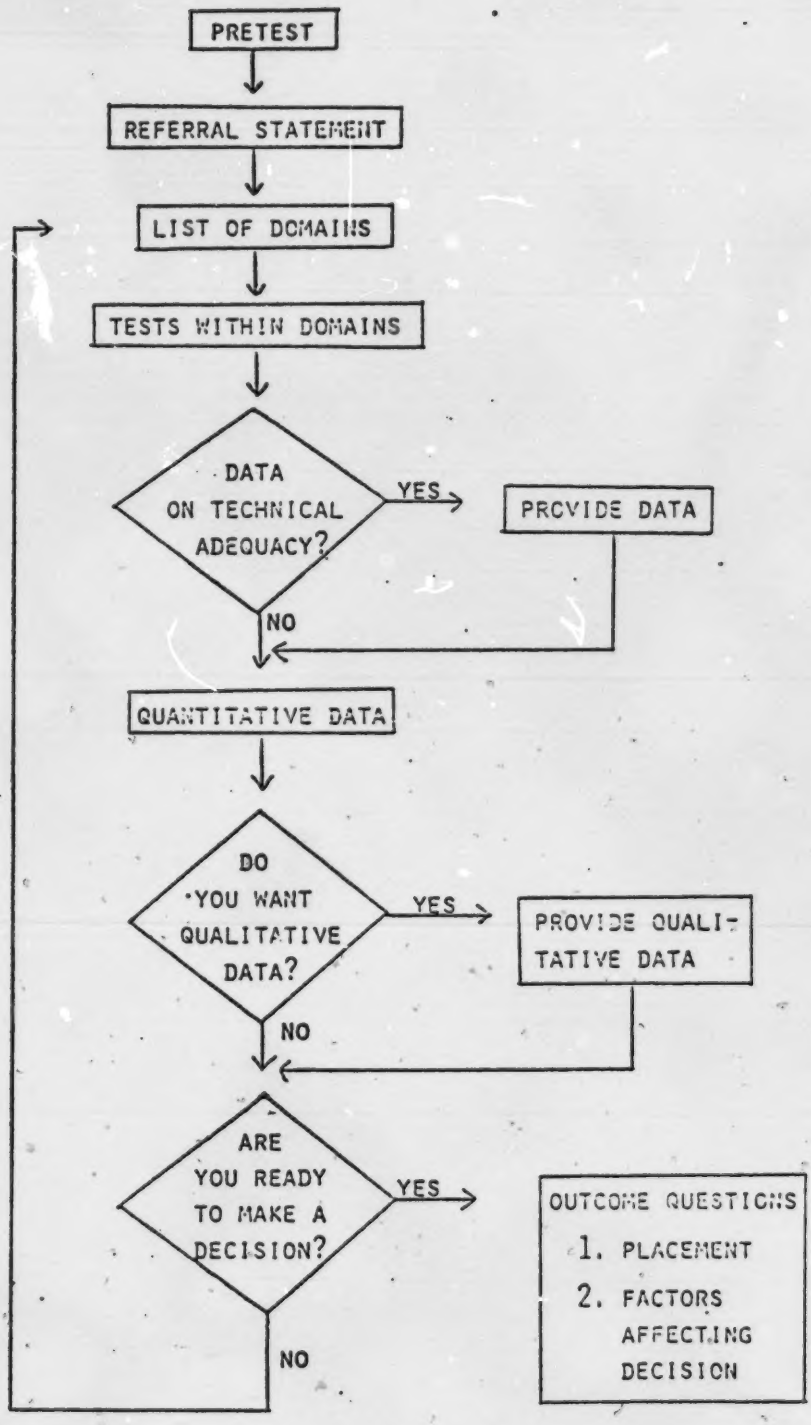

Figure 1. Flow Chart

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